

ABSTRACT OF THE DISCLOSURE

[59] The invention relates to a compact time-of-flight mass spectrometer which enables very accurate mass determinations. The invention consists of a method of producing a high resolution by means of a long flight path, where the ion beam
5 repeatedly sweeps a figure of eight in two opposed cylindrical capacitors, each of 254.56° , and the linear ion beam paths between the cylindrical capacitors are extended virtually by a change in potential so as to cause a time focusing with respect to an initial energy spread.